

providing standard serial ports **136**; and parallel port logic for a parallel port **134**. A read only memory (ROM) **126** couples to the MSIO **124** for providing code to the **8051** microcontroller. Additionally, the ROM **126** provides basic input/output services (BIOS) code to the CPU **100**, which is copied from the ROM **126** and shadowed in system memory **106** upon system initialization so that thereafter the **8051** microcontroller may access the ROM **126**. A 1 bit MSIO Serial Bus (MSB) is provided for shadowing registers containing information relating to power management and hot docking. Ideally, the bus is designed to be extensible and very low latency.

When the laptop L is docked to an expansion base, the MSIO-L **124**, and system components in the expansion base are coupled by an a standard I<sup>2</sup>C-bus **149**. The integrated circuit or I<sup>2</sup>C-bus **149** is a simple bi-directional two wire bus used to provide efficient control and identification functions between integrated circuitry. Details of the I<sup>2</sup>C-bus can be found in the "The I<sup>2</sup>C-Bus and How to Use It (Including Specification)," published by Phillips Semiconductors, January 1992. Briefly, the I<sup>2</sup>C-bus **149** is formed of two lines: a serial clock line (SCL) and a serial data line (SDA). Each of these lines is bidirectional. The SCL line provides the clock signal for data transfers which occur over the I<sup>2</sup>C-bus. The SDA line is the data line for data transfers which occur over the I<sup>2</sup>C-bus. Each device connected to the I<sup>2</sup>C-bus is recognized by a unique address. Low value series resistors (not shown) are typically provided at each device connection for protection against high-voltage spikes.

In the laptop computer L, a modem and audio peripheral **128** is also provided and coupled to the ISA bus **138**. The modem and audio peripheral **128** includes a standard telephony communications port **139** (FIGS. 2 and 6) for coupling to a telephone T, and interfaces **141** and **143** for coupling to stereo speakers S and a microphone M, respectively.

The case C of the portable computer system P includes a lower case body **200** and a case cover **202** which is movably mounted to the case body **200** at a connector mechanism which is a part of the case C of the laptop computer L. A suitable connector mechanism, for example, is provided in the form of a pair of hinged or pivoted connectors **204** (FIG. 3) at rear side portions of the laptop computer L. Both the lower case body **200** and the cover **202** are preferably formed of a molded synthetic resin, preferably a suitable polypropylene, of a suitable rigidity and strength.

The lower case body **200** includes a receptacle **206** (FIG. 3) defined by a rear wall **208**, sidewalls **210** and **212** and a forward wall or partition **214**. The walls of the receptacle **206** are comparable in height to side walls of the housing H of the laptop computer L. The receptacle **206** of the case C is provided with a base or floor **216** and the interior or lateral dimensions between the rear wall **208** and partition **214**, and the sidewalls **210** and **212**, are selected to have an areal extent slightly greater than the corresponding lateral dimensions of the housing H. The particular dimensions of the receptacle **206** are thus related to the dimensions of the particular type of laptop computer L to be mounted in the case C. With the dimensional relation between the housing H set forth above, in this way, the housing H may be inserted and fitted firmly in place within the receptacle **206** with adequate frictional or mechanical engagement so that the housing H is fittingly received and firmly held in place in the case C once inserted. For removal purposes, a suitable number of access ports or openings **220** (FIGS. 3 and 9) are formed in the base **216** of the case C so that the housing H

may be contacted by a user and pushed or urged out of the receptacle **206** when necessary. A base or bottom wall **224** of the case C is provided with a set of raised spacer ribs **226** extending across the bottom wall **224** for supporting the portable computer system P on a table, a user's lap, or other suitable work surface.

The laptop computer housing H is provided with an air outlet **230** (FIG. 3) in a sidewall **232** so that heat may be vented from its interior. The case C correspondingly has an air outlet **236** (FIGS. 3 and 8) formed in the sidewall **210** at a position aligned with the air outlet **232** of the housing H when the laptop computer L is mounted within the receptacle **206**. In this way, heat from within the interior of the laptop computer L is vented externally of both the case C and the housing H when the computer P is in an operating mode.

The power supply connector **90** (FIGS. 2 and 6) of the laptop computer L is mounted on a rear wall **240** of the housing H so that an electrical supply cord and connector may be connected. The rear wall **208** of the case C has a port or opening **242** (FIGS. 3 and 6) formed in it in alignment with the connector **90** so that the portable computer system P may be connected to receive electrical power while mounted in the case C.

The laptop computer L includes a number of input/output (I/O) devices external of the housing H for providing external data inputs to the microprocessor **200** and other components of the personal computer system P, such as interface **143** (FIGS. 2 and 6) for the microphone M, interface **141** for the headphone/speaker S, video terminal **115** and the infrared (IR) input **133**. These connectors or terminals are accessible at a location **250** (FIG. 6) on the rear wall **240** of the housing H. The rear wall **208** of the case C has a data input port **252** (FIGS. 3 and 6) correspondingly sized formed in it in alignment with the I/O terminals accessible at the location **250**.

Similarly, the connector or phone terminal jack **139** (FIGS. 2 & 6) for connection of the modem **128** to the telephone T is formed in the rear wall **240** of the housing H as shown in FIG. 6. The rear wall **208** of the case C has a second data input port **258** (FIGS. 3 & 6) correspondingly sized and formed in it in alignment with the phone connector terminal **139**. In this manner, the various input/output (I/O) devices external of the housing H of the personal computer system P are provided with access to the laptop computer L while the computer system P is mounted within its case C and operating.

The laptop computer L is also adapted to receive a number of external cards **120** (FIG. 2), such as an international modem or other type of add-on cards of the type such as the PCMCIA style, as set forth above. Two card slots **260** and **262** (FIG. 7) are accessible at openings formed in a sidewall **266** of the housing H. The sidewall **212** of the case C has a corresponding pair of openings **270** and **272** (FIGS. 3 & 7) formed in it in alignment with the slots **260** and **262** so that the particular types of add-on cards **120** desired to used with the laptop computer L may be inserted into and connected with the laptop computer L while the computer L is mounted within its transport case C.

For add-on cards of the type shown at **120**, an ejection lever **267** (FIG. 7) is accessible through an opening **268** formed in the sidewall **266** of the housing H. An opening **276** (FIGS. 3 & 7) is formed in the sidewall **212** of the case C in alignment with the opening **266** for access to the ejection lever **267** so that the add-on cards **120** may be disconnected from the laptop computer L and removed therefrom while